REMARKS

Claims 1-20 were pending in this application.

Claims 1-20 have been rejected.

No claims have been amended.

Claims 1-20 remain pending in this application.

Reconsideration and full allowance of Claims 1-20 are respectfully requested.

I.   REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects Claims 1-14 and 20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,282,633 to Killian ("*Killian*") in view of U.S. Patent No. 6,006,324 to Tran ("*Tran*") and U.S. Patent No. 6,173,305 to Poland ("*Poland*"). The Office Action rejects Claims 15-19 under 35 U.S.C. § 103(a) as being unpatentable over *Killian* and *Poland*. The Applicants respectfully traverse these rejections.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (*MPEP § 2142; In re Fritch, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)*). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (*MPEP § 2142; In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984)*). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. (*MPEP § 2142; In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d*

1443, 1444 (Fed. Cir. 1992); In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956

(Fed. Cir. 1993)). If the Patent Office does not produce a *prima facie* case of unpatentability,

then without more the applicant is entitled to grant of a patent. (*In re Oetiker, 977 F.2d 1443,*

1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Grabiak, 769 F.2d 729, 733, 226

U.S.P.Q. 870, 873 (Fed. Cir. 1985)).

A *prima facie* case of obviousness is established when the teachings of the prior art itself

suggest the claimed subject matter to a person of ordinary skill in the art. (*In re Bell, 991 F.2d*

781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993)). To establish a *prima facie* case of

obviousness, three basic criteria must be met. First, there must be some suggestion or

motivation, either in the references themselves or in the knowledge generally available to one of

ordinary skill in the art, to modify the reference or to combine reference teachings. Second,

there must be a reasonable expectation of success. Finally, the prior art reference (or references

when combined) must teach or suggest all the claim limitations. The teaching or suggestion to

make the claimed invention and the reasonable expectation of success must both be found in the

prior art, and not based on applicant's disclosure. (*MPEP § 2142*).

Claim 1 recites a "constant generator unit" capable of receiving fetched instruction

syllables and generating at least one constant operand by "right justifying the K bits to produce a

short constant operand" and/or "combining the K bits with T bits of data from a T bit constant

field to produce a long constant operand." The Office Action acknowledges that *Killian* does not

disclose these elements of Claim 1. (*Office Action, Pages 2-3, Paragraph 4*). The Office Action

then asserts that *Poland* discloses these elements of Claim 1 and that it would be obvious to

combine *Killian* and *Poland*. (*Office Action, Pages 2-3, Paragraphs 4-5*).

Killian recites a RISC processor that implements an optimized instruction set. (*Abstract*). The processor includes a decoder (element 201), which decodes instructions in a register (element 202). (*Col. 5, Lines 52-53*). As part of the decoding process, the decoder decodes constant fields in the instructions. (*Col. 5, Lines 53-54*).

Poland recites an apparatus for determining a quotient. (*Abstract*). The apparatus includes a barrel rotator (element 235) and an arithmetic logic unit (element 230). (*Abstract*). The apparatus operates by using the barrel rotator to shift a data value (such as the numerator), and the arithmetic logic unit subtracts the divisor from the shifted data value. (*Abstract*). As an example, *Poland* recites how the barrel rotator and a mask generator (element 239) generate shifted values and masks used by the arithmetic logic unit. (*Col. 71, Line 6 – Col. 72, Line 64*).

There is absolutely no motivation to modify *Killian* with this functionality of *Poland*. *Killian* recites a decoder that decodes constants contained in instructions. *Poland* recites an apparatus that shifts already-decoded values to calculate a quotient. The cited portion of *Poland* contains absolutely no mention of shifting values during decoding of an instruction. Instead, the cited portion of *Poland* describes how a quotient is calculated using already-decoded operands (numerator and divisor). There is no motivation whatsoever to include the right shifting functionality of *Poland* in the instruction decoder of *Killian*.

Moreover, the Office Action asserts that using the right shifting and masking functions of *Poland* would "have allowed [*Killian*] to extract operand constants quickly." (*Office Action, Page 3, Paragraph 5*). This assertion has absolutely no support in *Killian* or *Poland*. The cited

portion of *Poland* never states that the right shifting and masking functions are used to "extract operand constants." Rather, as described above, the right shifting and masking functions are done to compute a quotient. The quotient would be computed only after the operands (numerator and divisor) have been decoded. There is nothing in the cited portion of *Poland* supporting the Office Action's assertion that these functions would allow operand constants to be extracted from instructions.

In addition, the Office Action fails to show that right shifting is even needed in the system of *Killian*. *Killian* simply recites that a decoder decodes constants contained in instructions. The Office Action cites absolutely nothing to show that the decoded constants in *Killian* need to be right shifted before further processing. Without showing that there is a need to right shift values to decode constants, the Office Action cannot establish a motivation to modify *Killian* to include the right shifting functionality of *Poland*.

For these reasons, the Office Action fails to establish a *prima facie* case of obviousness against Claim 1 (and its dependent claims).

Claim 15 recites receiving an "input syllable that contains a K bit field containing K bits that represent a short constant operand" and "right justifying [the] K bits in an output syllable."

The Office Action asserts that *Killian* discloses providing bits representing a short constant operand to a sign extension unit at column 7, lines 1-56. (*Office Action, Page 6, Paragraph 18*). However, *Killian* in no way discloses that constants are provided to the sign extension unit. The cited portion of *Killian* deals with operations performed by a "memory access" or "M stage" and a "writeback" or "W stage" of a processor. (*Col. 4, Lines 44-45; Col.*

6, Line 57 – Col. 7, Line 56). These stages are not responsible in any way for decoding constants contained in retrieved instructions. Also, the Office Action has not identified a single portion of *Killian* showing that the constants decoded by the decoder of *Killian* are provided to the sign extension unit of *Killian*. In fact, the cited portion of *Killian* never even mentions the use of constants.

Moreover, even if a constant from an instruction was provided to the sign extension unit of *Killian*, Claim 15 recites receiving in a sign extender unit an "input syllable that contains a K bit field containing K bits that represent a short constant operand." The Office Action fails to explain how the sign extension unit of *Killian* receives an "input syllable" that contains bits representing a constant operand.

In addition, the Office Action once again cites *Poland* and asserts that it would be obvious to combine *Killian* and *Poland*. (*Office Action, Pages 6-7, Paragraphs 19-20).* As shown above, there is no motivation to combine *Killian* and *Poland*.

For these reasons, the Office Action fails to establish a *prima facie* case of obviousness against Claim 15 (and its dependent claims).

Claim 18 recites receiving an "extension syllable" having a "T bit field containing T bits that represent the high order bits of [a] long constant operand" and an "instruction syllable" having a "K bit field containing K bits that represent the low order bits of [the] long constant operand." Claim 18 also recites combining the "K bits" and the "T bits," where the combination represents the "long constant operand."

The Office Action cites portions of *Killian* and *Poland* that recite sign extending various

values. The cited portions of *Killian* and *Poland* contain absolutely no mention of receiving two different syllables and combining bits from the syllables to form a long constant operand. The Office Action does not even attempt to argue that these references disclose combining bits from different syllables to form a long constant operand.

For these reasons, the Office Action fails to establish a *prima facie* case of obviousness against Claim 18 (and its dependent claims).

Accordingly, the Applicants respectfully request withdrawal of the § 103 rejections and full allowance of Claims 1-20.

II.   CONCLUSION

As a result of the foregoing, the Applicants assert that all claims in this application are in condition for allowance and respectfully request allowance of such claims.

SUMMARY

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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Date: Dec 15 2004

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